

IHS Annual Energy Narrative Report

I. Management and Administration

A. Energy Management Infrastructure

1. Senior OPDIV Official

The senior Agency Official is the Director, Division of Facilities Operations. This person supervises the Agency's Energy Coordinator. The Agency Energy Team consists of 12 Area Offices (Aberdeen, Albuquerque, Alaska, Bemidji, Billings, California, Nashville, Navajo, Oklahoma, Portland, Phoenix, and Tucson) and two Regional Offices (Engineering Service (ES) in Dallas and Seattle). The 12 Area Offices and 2 Engineering Services Offices each have a designated Energy Coordinator who is supervised by the Area Facility Engineers or ES Directors.

<u>Area</u>	<u>Energy Coordinator</u>
Aberdeen	Marty Laroche
Albuquerque	Deanne Waconda
Alaska	Gary Kuhn
Bemidji	Victor Mosser
California	Kerry Gragg
ES-Dallas	Suresh Shah
ES-Seattle	John Rogers
Headquarters	Kevin Stover / Allen Bollinger
Nashville	George Styer
Navajo	Nate Morris
Oklahoma	Ken McKenzie
Phoenix	Eugene Price
Portland	Dale Mossefin
Tucson	Bob Drummond

2. Area Centralized Energy Program

- Aberdeen: A Project Engineer in the OEHE Martin Field Office compiles energy data and sends it into the Area Office. The data is entered to the database by Area Office staff.
- Alaska: Alaska employs an Area energy coordinator to collect and report data to the Tribal Health Organizations (THO's) and IHS Headquarters. The coordinator seeks energy saving program and project opportunities and works directly with the THO Facility Managers to implement energy conservation measures and training. The Alaska Area has concluded six energy audits out of the seven hospital campuses serving Alaska Natives and American Indians in Alaska. These six audits identified \$2,400,000 in Energy Conservation Measures (ECM's) that could potentially save \$588,000 dollars annually. The Alaska Area has continued to accomplish Energy Conservation Measures (ECM's) this year including the mid-summer commissioning of a ground water cooling system at ANMC in Anchorage. Projects anticipated for the 2004 fiscal year are not as sure due to fiscal restrictions on the Tribal Health Organization (THO) budgets. The MIRAC determined that funding for completion of energy audits would now be up to the individual THO's and not necessarily funded through the M&I funding sources. The collective magnitude of cost needed to address energy needs, approximately 2.4 million dollars reported last year for the audited hospitals, is now required to be sought outside of the IHS M&I Project Pool, or at least supplemented. However, this does not address all

healthcare facilities, but only a fraction of them in Alaska. The annual energy consumption reported here shows increase overall by about 2.3 percentage points, FY04 compared to FY03. This is largely due to an increase of natural gas consumption for facility process and heating loads. To a large degree, the ECM's we continue to implement just offset the major increase energy requirements for providing the proper patient environment. During this same time the cost of this energy increased by about 7.6 percent, further compounding the operational budget challenges the THO's are experiencing.

Note an error in reporting of the natural gas energy was discovered and corrected in this year's data.

Albuquerque: The Area Energy Management Program is coordinated through the designated Area Energy Coordinator under the supervision of the Area Health Facilities Director. The Energy Coordinator is responsible for preparing all reports and coordinating activities with the service units, Area Project Engineers, and Area Finance. The Service Unit Facility Managers and Engineers are responsible for managing their energy consumption.

Billings: Burke Helmer, P.E., Energy Coordinator, compiles total dollars spent through WebFRS for each utility in the Billings Area. Average utility rates are calculated using the data from the major facilities within the Billings Area. These numbers are then used to report to Headquarters. Obtaining direct utility data for each building is currently too time prohibitive, but the Area Office has been tracking actual utility usage for our three hospitals, Lame Deer Health Center, and a few of the smaller clinics for the past couple of years. In addition, we have actively been modifying the automated building control systems to optimize energy efficiency at those buildings as well as been making operational recommendations to the facility staff. This includes as much in-house commissioning as possible with the use of test and balance equipment, I.e. flow hoods, water meters. Training has been integral part of the process.

Oklahoma City: Energy Awareness Month materials (Smart Energy Choices posters, Lenticular (3D animated) Bookmarks, and Fold over business card carriers) created and produced through the Federal Energy Management Program's "You Have The Power" campaign in 2004 were distributed at our largest hospital. An Area Office Engineer attended a course in 2004 sponsored by the Association of Energy Engineers as partial fulfillment of requirements to maintain his certified energy management (CEM) credentials. The Area Energy Coordinator completed 3 professional development hours in 2004 by attending seminars on "Trends in Direct Digital Control", "High Efficiency Boilers", and "Finding Wasted Energy Dollars in Steam Systems". The Energy Team consists of the Area energy coordinator, a mechanical engineer, a facility engineer, and facility managers.

Phoenix: Each Service Unit facility Manager is the energy coordinator for their Service Unit. The Phoenix Area has nine Service Units. All energy information is transmitted to the facility managers. They are responsible for reduction of energy and water consumption. The tribal contracted facilities are not included since operation of these facilities are autonomous and are not a part of the Phoenix Area Energy program. They only report their annual energy consumption.

Portland: In the Area Office, a facility engineer serves the role of energy coordinator. This individual is responsible for the annual energy reports and the bulk of energy related projects.

Tucson: The Energy Management Officer works under the direction of the Area Facilities Engineer. Efforts are coordinated thru periodic meetings with the Facility Managers. In FY 2003, work began on an energy audit that will incorporate LEED for Existing Building criteria. It is anticipated that projects will be identified in 2004 and incorporated into new and existing projects.

B. Management Tools

1. Awards (Employee Incentive Programs)

IHS received the following HHS 2003 Awards:

Individual/Energy Efficiency/Energy Management:

LCDR Gordon Delchamps, P.E., C.E.M., Mechanical Engineer

IHS Oklahoma City Area, Claremore Indian Hospital

LCDR Gordon Delchamps, a Mechanical Engineer for the IHS Oklahoma City Area, managed an extensive chilled water plant upgrade project at the Claremore Indian Hospital in Claremore, Oklahoma. The chiller plant for the 110,000 square foot facility was decreased in size by 200 tons of cooling capacity, 35 hp of pumping energy, and 10 hp of fan energy. A variable speed secondary pumping distribution system was installed and the cooling tower fan motors were equipped with variable speed drives. The decreased plant size coupled with efficient design improvements will provide substantial energy savings since the system will operate at optimal efficiencies during both full-load and part-load periods. A design/build construction process was utilized to minimize the contracting time-frame and costs. The new chillers use environmentally friendly refrigerant and an automatic filtration system for the condenser water system that minimizes make-up water needed during the backwash process.

Small Group/Energy Efficiency/Energy Management:

Gary McFarland, Director

Burke Helmer, Mechanical Engineer

IHS Billings Area, Division of Facilities Management

Billings, Montana

Gary McFarland, Director, and Burke Helmer, Mechanical Engineer, of the IHS Billings Area, Division of Facilities Management (DFM), have developed innovative practices to promote and foster energy and water efficiency activities at healthcare facilities for Native Americans in Wyoming and Montana. There are three primary elements of their conservation program. The first is an incentive program, including cash awards for individuals or service units, designed to increase the number of energy and water conservation projects. The second element is that the DFM staff directly assists the service units on conservation projects by performing a life cycle-cost analysis for each project. And finally, DFM publishes an energy or water efficiency article in the Billings Area monthly newsletter.

Organization/Energy Efficiency/Energy Management:

IHS Portland Area, Division of Facilities Management

Portland, Oregon

The IHS Portland Area, Division of Facilities Management (DFM), manages eight Federally owned healthcare facilities providing care to Native Americans in Oregon, Washington and Idaho. Wesley Bell, Director, and Dale Mossefin, General Engineer, are the key personnel in the Division. Implementing energy efficient measures in these facilities has been quite a challenge because the size of the buildings varies significantly, as well as, the diverse climates where they are located. However, by placing emphasis on energy projects and programs, DFM has achieved a 42 percent reduction in energy consumption on a square foot basis as compared to the FY 1990 baseline.

Albuquerque: Departmental awards, the Annual Area Director's Awards Program, and Certificates of Appreciation are used to recognize individuals and/or programs who are instrumental in improving energy efficiency.

Bemidji: The White Earth Health Center Facilities staff received an Area Director Award for the Alternative Energy Generator Project. The project allowed the Health Center to lock in on a five-year electric rate of five cents a kilowatt-hour.

Billings: The Billings Area Office has implemented a new Energy Awards Program open to all employees within the Billings Area. The program has four different award categories that either an individual or a group of individuals can submit a project nomination. Three of the awards are cash awards and the fourth is a Service Unit Award that can receive \$25,000 of M/I money to supplement the facility program. All potential award nominations are submitted to the Area Office for review by a registered engineer and must have a payback of three years or less. The projects must then be initiated by the Service Unit with cooperation by the Area Office.

Portland: On-the-spot awards have been provided to Service Unit employees who have implemented and demonstrated successful energy management policies and practice. Personnel are also nominated for national, agency, regional, or local recognition for outstanding contributions in conserving energy.

2. Performance Evaluations

Albuquerque: Responsibility of the Energy Program is included in the performance evaluation of the Area Office Mechanical Engineer. Other position descriptions and performance evaluations of those implementing the Executive Order do not specifically address energy efficiency, water conservation, or solar and other renewable energy projects. However, such actions are noted in performance evaluations since they are normal to the positions.

Bemidji: Energy management is part of the position description and duties of the Area assistant facilities Engineer.

Oklahoma City: We began implementing a strategy to comply with some sections of EO 13123 in FY04 at the Lawton Indian Hospital and the W.W. Hastings Indian Hospital.

Portland: The performance evaluation of energy program manager includes a consideration of performance as energy program manager.

Tucson: Energy conservation elements are included in the position descriptions for facility managers.

3. Training and Education

Aberdeen: Energy data collection was discussed at the annual workshop.

Alaska: ANTHC provides energy management and conservation training to staff engineers. ANTHC engineers participate in energy conservation seminars and workshops. Energy conservation elements of HVAC and DDC systems are also covered at these seminars and workshops. Headquarters staff have trained facility managers and service unit staff on energy awareness. The FEMP energy awareness publications and information is channeled to the THO Facility Managers for energy awareness. On-site energy training is conducted for FM and Staff at the regional hospitals.

Albuquerque: Training is made available to all service unit facilities maintenance staff. Five maintenance employees attended various HVAC, DDC, electrical, and plumbing training courses throughout the year. These courses were selected to enhance their skills or to orientate the staff with new equipment/technology. Three HF staff participated in Energy Management courses offered by a local utility provider throughout the year. These courses are a part of the utility's Energy Academy Program and are made available to all of their large corporate customers. Another local controls company continues to offer hands on training on the utilization and installation of their equipment and controls to HF staff.

Bemidji: Energy conservation and management training opportunities have been announced to staff.

Billings: Training is available to all service unit facilities staff for the control and operation of building HVAC systems. The Billings Area utilizes direct digital control for all

- of its larger facilities. Control system training that incorporates better energy management is provided to facility managers.
- Oklahoma City: The Area Energy Coordinator gave a presentation on the Energy Star program at our 2003 facility managers meeting. Information on eligibility criteria, data needed, and score interpretations was presented. The Energy Star Upgrade Manual for Buildings was discussed which included topics such as: business analysis overview, financing, recommissioning, lighting, load reductions, fan systems and heating/cooling. Implementing building tune-up strategies were discussed along with "best ways to save". The Area Energy Coordinator gave a presentation at our facility managers meeting concerning his role on the Sustainability Workgroup regarding refrigerants, mechanical/electrical systems, and potential applications to OKC Area projects. Most of this presentation focused on an overview of Leadership in Energy and Environmental Design (LEED) Version 2.1 along with an overview of 2 main ASHRAE standards which are referenced in LEED Version 2.1 which are ASHRAE Standard 62-2001 (Ventilation for Acceptable Indoor Air Quality) and ASHRAE/IESNA Standard 90.1-1999 (Energy Standard for Buildings Except Low-rise Residential Buildings). An actual copy of Executive Order 13123 was distributed to facility managers at this meeting. Dr. Wayne C. Turner, Regents Professor of Industrial Engineering and Management at Oklahoma State University, gave a presentation at our facility managers meeting in 2003 regarding practical applications of their work.
- The GSA Energy Security Guide Book was provided to facility managers in electronic format.
- Phoenix: The service unit facility managers will continue receiving the Department of Energy FEMP FOCUS publication.
- Portland: Portland Area OEH&E seminar discusses elements critical to effective energy conservation. Over 30 Service Unit and Area personnel attended. Annual Areas typically discuss energy conservation topics. Facilities managers also routinely discuss energy conservation with staff facility meetings
- Tucson: Training needs are re-assessed continually and training plans submitted annually. Specific courses included HVAC, air conditioning, appliance, and furnace servicing.

4. Showcase Facilities

- Albuquerque: The Albuquerque Indian Hospital was again recognized as an Energy Star building. Since the hospital has changed its status to an out patient facility only, it will now be ineligible for further inclusion in the Portfolio Manager. Other forms of recognition will be researched as efficiency continues.
- Billings: The Ft. Belknap Service Unit successfully completed a project to retrofit their existing building control systems at both the Ft. Belknap Hospital and Hays Health Center. Included in the project was a commissioning phase that ensured both systems were operating as designed. This has reduced gas consumption by 60% and electricity usage by 40% during the last four months of operation as compared to last year's data.
- Oklahoma City: The new Pawnee Health Center was completed in FY 2004 by the Pawnee Nation. The facility utilizes a geothermal loop system and exhaust fans with energy recovery coils.

II. Energy Efficiency Performance

A. Energy Reduction Performance

1. Standard Buildings

IHS has been classified as Energy Intensive. There is no data to report on Standard Buildings.

2. Industrial and Laboratory Facilities

IHS has reduced from a usage of 242,633 btu/gsf in 1990 to 180,680 btu/gsf in 2004. This represents a reduction of 26%.

3. Exempt Facilities

Government owned quarters energy data has historically not been included in this report. Quarters are all individually metered and are billed directly to the tenants. Energy efficiency improvements are made whenever possible from quarters' return funds.

4. Tactical Vehicle and Equipment Fuel Use

All fuel consumption data is collected by GSA through the use of their FAST program.

B. Renewable Energy

1. Self-generated renewable energy

- Albuquerque: An assessment and an energy audit on the performance of the solar energy collection system at the ACL hospital were performed. A portion of the solar panels will be removed to aid in reducing maintenance costs and improve the efficiency of the overall system.
- Nashville: The Nashville Area hospitals have solar collection systems that reduce heating costs of the facilities. When the systems are fully functional, they reduce energy usage up to 10 percent.
- Oklahoma City: An assessment recommendation was provided in FY 2004 by graduate students and faculty advisor Wayne C. Turner, Ph.D., PE, CEM regarding the installation of a 10 kW Bergey Excel-S (or similar) wind turbine at the Haskell Health Center. The assessment recommendation included a life cycle cost analysis (net energy \$, O&M \$, cash flow \$, and Present Worth \$) using a 0% Minimum Acceptable Rate of Return. Weibull performance calculations were included along with wind probability percentages for various wind speed bins. The Haskell Health Center is in wind power class 3 according to wind maps from the NREL web page. 13,464 kilowatt-hours per year (48 Giga Joules) of electricity could be generated from a renewable source and \$536 per year could be saved if \$36,857 was spent to install this wind turbine. The payback period was determined to be 68.8 years and the project was not constructed. A similar assessment recommendation to install a wind turbine was also provided in FY 2004 for the W.W. Hastings Indian Hospital but the project was not constructed due to lengthy payback.

2. Purchased renewable energy

- Alaska: Over 12,000 MMBTU of Waste Heat was purchased from local utility companies and piped into a heat exchanger at the Bethel Hospital.
- Albuquerque: The Albuquerque area's major utility provider, PNM, implemented an alternative wind energy program. The Albuquerque Indian Hospital and Santa Fe Indian Hospital, the area's highest users, now purchase a percentage of their electricity from wind energy. PNM reduced electric rates by 4% in September 2003. At a cost of an additional 1.8 cents/kwh, both hospitals still netted a rate reduction.

C. Petroleum

	1990			2004			Percent Change
GSF	5,964,788			6,445,798			
Oil 1000Gal	1,201.16	0.20	GAL/GSF	1,199.20	0.19	GAL/GSF	-7.61%
Oil Cost in \$1000	1,243.81	1.04	\$/GAL	1,777.00	1.48	\$/GAL	43.10%
NG 1000CuFt	696,039.05	116.69	CuFt/GSF	372,084.20	57.73	CuFt/GSF	-50.53%
NG Cost in \$1000	1,757.00	0.0025	\$/CuFt	2,051.00	0.0055	\$/CuFt	118.37%
LPG Propane 1000Gal	1,443.87	0.24	GAL/GSF	662.10	0.10	GAL/GSF	-57.57%
LPG Propane Cost in \$1000	754.55	0.52	\$/GAL	660.90	1.00	\$/GAL	91.01%

- Aberdeen: Fuel oil consumption increased from 245,000 gallons in FY 85 to 333,000 gallons in FY 2004. Propane consumption increased from 34,000 gallons to 84,000 gallons in the same time period.
- Albuquerque: LPG/propane is used at all facilities in the rural areas where natural gas is not available. Diesel is used on a limited basis and mainly for backup & generator purposes. Propane use at the Zuni and Mescalero Indian hospitals has reduced with improvements made to the boiler systems since the baseline year.
- Billings: 1990 -0 gals propane 2004 -117000 gals propane
- Oklahoma City: Approximately 9000 gallons of #2 fuel oil was used in the OKC Area in FY 2004. Data from 1990 is not known.
- Portland: Base Year (1990) petroleum based product consumption was 9,342 M-BTU's. Consumption was from Natural Gas and propane. Current year consumption was 6,527 M-BTU's from natural gas and propane.

D. Water Conservation

- Aberdeen: The Area has not developed a water conservation program because the infrastructure is not in place. Many buildings do not have water meters to measure consumption.
- Alaska: This was analyzed during the hospital comprehensive energy audits conducted in 2002. We are continuing to pursue ECM's during renovation and upgrade O&M activities.
- Albuquerque: Water usage continues to be monitored at each service unit. Projects that included equipment replacement or repairs that had an affect on water usage were performed with consideration of water efficiency. Several projects included: digital controls for hot water heaters, low flow toilets, waterless urinals, instantaneous water heaters, water meter installations.
- Bemidji: Water softener units were installed that utilized reduced volume regeneration cycles.
- Oklahoma City: Opportunities for water conservation were identified for the Anadarko Indian Health Center and the Lawton Indian Hospital via a SAVEnergy Audit that was funded by the Department of Energy in FY03. Water Conservation screening was completed for both of these facilities by collecting information regarding water use

and water utilities from previous bills, conducting a walk-through survey with the facility manager to understand how water is used at the sites, documenting equipment that uses water, and inputting the site survey data into a "Watergy" computer program for the analysis. 2 potential conservation opportunities were identified for Anadarko and these include installing 17 low flush toilets and urinals with a simple payback of 8.2 years and installing 2 faucet aerators with a simple payback of 1.1 year. No water conservation strategies resulted from the Watergy screening for Lawton but interviews with the facility maintenance personnel identified that water consumption for the cooling tower was high and a filter in the condenser water loop along with repair of the total dissolved solids controller would reduce the bleed down of the cooling tower and thus reduce the amount of make-up water currently required.

A condenser water filtration system, which features an electronic backwash controller, was installed for the new cooling tower at Claremore and the amount of rinse water is reduced with the way the screens are now cleaned. Guidance on water-conservation best management practices from FEMP's web site, EPA's Water Efficiency Web Page, and the Water Mgmt. Guide from GSA was provided to facility managers.

Portland: The Portland Area Office provides service units with technical support to improve water efficiency. All new construction and remodeling projects which involves the consumption of water will use water conservation devices.

Tucson: The facilities are replacing outdated toilets, faucets, shower heads and other devices with water saving products. The facilities are reviewing watering schedules and desert landscaping to reduce water consumption. Amount of water spent maintaining landscaping is decreasing through more efficient use. Replacement of irrigation system with lower usage system will be accomplished when funding becomes available. Amount of landscaping to be maintained will decrease when proposed replacement facilities come on line.

III. Implementation Strategies

A. Life-Cycle Cost Analysis

Aberdeen: The FY 02 ESPC contract with Johnson Controls Inc. included a life cycle cost analysis for energy conservation opportunities at all 17 Aberdeen Area facilities. The contract was implemented at nine locations, which were determined to be cost effective for the payback time.

Albuquerque: The project engineers perform a life cycle cost analysis when reviewing products and services.

Bemidji: Life-cycle cost analysis is required for all contract services and for government procurement of products, services, construction, and other projects to lower energy and water consumption.

Billings: Life-Cycle Cost Analysis is performed on as-need basis with an ROI greater than 1 as a baseline.

Nashville: Life-Cycle Cost Analysis can determine the priority of energy projects. The shorter the pay back period the more attractive the project becomes. Most projects that we have funded provide pay back within five years.

Oklahoma City: A study was performed at the Claremore Indian Hospital to determine the mechanical system requirements for the building versus what the current systems can provide. System upgrade options were presented and evaluated. The "best" solution was chosen based on life-cycle analyses and the cooling tower, chillers, and pumps were replaced.

Portland: Life cycle cost analysis is done on large projects to assure 10-years paybacks are anticipated. For energy conservation projects (less than \$25,000), technologies with proven paybacks (Energy Star products) are used to assure energy efficiency.

Tucson: Life-cycle cost analysis included in building procurement documents. Energy efficiency and maintenance cost estimates are considered when procuring equipment.

B. Facility Energy Audits

11% of space was audited during FY 2004. All total 70% of IHS space has had an energy audit preformed since 1992.

Energy Audits Completed in 2004				
Area	Inst No	Inst Name	State	City Town
Albuquerque	31103	SIPI Indian Dental Center	NM	ALBUQUERQUE
Albuquerque	33115	PHS Indian Hospital	NM	SAN FIDEL
Billings	11502	PHS Indian Hospital	MT	CROW AGENCY
Navajo	41248	Ft. Defiance Hospital-New	AZ	FORT DEFIANCE
Oklahoma City	11493	PHS Indian School Health Ctr	KS	LAWRENCE
Oklahoma City	11528	PHS Indian Hospital	OK	CLAREMORE
Oklahoma City	11529	PHS Indian Hospital	OK	CLINTON
Oklahoma City	11534	PHS Indian Health Center	OK	PAWNEE
Oklahoma City	37553	W. W. Hastings Hospital	OK	TAHLEQUAH
Oklahoma City	11537	PHS Institutional Support Fac	OK	TAHLEQUAH
Portland	19712	PHS Indian Health Center	WA	TOPPENISH
Tucson	11482	PHS Indian Hospital	AZ	SELLS

C. Financing Mechanisms

Aberdeen: The Aberdeen Area and Engineering Services-Seattle negotiated an ESPC with Johnson Controls Inc. in July 2001. The started in October 2001 with a 15 year contract period.

Albuquerque: Energy audits were conducted at the Albuquerque Indian Dental Center and the ACL Hospital through the DOE SAVEnergy program. DOE funded and contracted the audits. The Area Office and DOE are coordinating efforts for two more audits under the same program and funding format.

Oklahoma City: The OKC Area submitted a request for help with a "Sustainable Mechanical and Electrical Upgrades for an I.H.S. Hospital" project as a result of a U. S. Department of Energy Call for FY 2005 Technical Assistance Projects.

Tucson: Funding for all energy conservation work is currently from M&I or M&M funds.

D. ENERGY STAR® and Other Energy-Efficient Products

Alaska: Information is disseminated to MIRAC and service unit staff relative to energy efficient products.

Albuquerque: Energy efficiency and cost savings are considered by personnel recommending and specifying products for procurement. Information on products is continuously forwarded to the project engineers and a record of these products is kept updated and available in the area HF library. New contracts include a requirement for all contractors to consider energy efficiency and EO 13123 in designing and constructing facilities.

Bemidji:	Energy efficiency is a routine determinant of product choices.
Billings:	All designs provided by the Billings Area Facilities Management staff use MASTERSPEC for specification writing. MASTERSPEC is updated quarterly with the latest energy efficient products.
Oklahoma City:	Steps taken to promote the purchase of ENERGY STAR® products and/or products that are in the upper 25 percent of energy efficiency as designated by FEMP included a Power Point presentation in 2003 by the Area Energy Coordinator to facility managers. Energy efficient criteria are incorporated into some specifications for new construction and renovation. Some criteria is incorporated into product specification language.
Phoenix:	With all new projects, procurement of Energy Star and other energy efficient products are incorporated into specifications.
Portland:	The Portland Area Indian Health Service Guidelines establishes model operations and maintenance purchasing procedures for increased energy efficiency with the service units.
Tucson:	The use of Energy Star products are considered for most purchases and are also considered during the conceptual planning phases of projects. Energy Star products are purchased if feasible.

E. ENERGY STAR® Buildings

Albuquerque:	The Albuquerque Indian Hospital was redesignated as an Energy Star building in FY 2003.
Billings:	The Billings Area currently has three hospitals within EPA's Energy Star Label Database. The Blackfeet Hospital is the only facility ranked high enough at a 76 to obtain the Energy Star Label. That is 33 percent of the Billings Area applicable buildings currently meeting the Energy Star Building criteria.
Oklahoma City:	No buildings met the ENERGY STAR® Building criteria and therefore none were officially designated ENERGY STAR® Buildings in 2004.
Portland:	The Neah Bay Service Unit is eligible to be officially designated as an Energy Star Building. This constitutes 11% of the Portland Area facilities.

F. Sustainable Building Design

Aberdeen:	The Area is aware of sustainable design building principles.
Alaska:	Designs for remodeling or additional space require energy efficient materials and equipment. Alaska Area engineers insure that care is taken in selecting equipment that is energy efficient.
Albuquerque:	All new construction incorporates energy efficient materials, equipment, and construction.
Bemidji:	Building design contracts are required to follow sustainable building design principles.
Nashville:	The Nashville Area does not plan to construct any new government owned facilities. Any new facility construction in the Nashville Area is limited to construction by Title I and III Tribes. Assistance is offered for design through the Engineering Services office in Dallas. The design is review by both the Area staff and the ES Dallas staff. Design review services have been used by Tribes in the past but design services have not.
Navajo:	The Health Facilities Planning Manual is used for all renovation and new facilities construction. Energy efficiency is incorporated into the design as is the use of energy efficient products.

- Oklahoma City: We made progress on advocating for, and obtaining some progress on, using sustainable building design principles into the sighting, design, and construction of new facilities in 2004.
- Portland: New facility construction and remodeling will use new practices and products for energy efficiency and water conservation.
- Tucson: Currently only one facility is under design. The building was reviewed informally for sustainable building concepts and will have more efficient lighting and environmental systems, native vegetation with water efficient landscaping, and reduced storm water runoff.

G. Energy Efficiency in Lease Provisions

- Albuquerque: Leased facilities are typically small Health Clinics or Health Stations at the various pueblos. These are typically inclusive of existing buildings, which are used for a variety of functions besides health care. When any of these facilities are replaced or new leases are requested, more energy efficient designs are incorporated into the new facilities.
- Nashville: Local GSA office incorporates these requirements if relocation occurs.
- Oklahoma City: Energy and water efficiency, when the OCK Area enters into new leases or renegotiate/extend existing leases, was briefly discussed in FY04 with our Area Realty Officer and the Lease Contracting Officer.

H. Facility Efficiency Improvements

- Aberdeen: New DDC control systems were installed at six locations to allow computer controlled heating and cooling systems. The ESPC contractor identified some service contracts in FY 04 which would further energy savings opportunities.
- Alaska: We are developing THO Energy Strategies for each THO to get organizational staff members more focused on strategic energy conservation action that will achieve energy goals and positive monetary results.
- Albuquerque: An AE company is under contract with the Mesalero Hospital to replace the boiler system with a more efficient system.
- Bemidji: Boilers were converted from fuel oil to natural gas. Cast iron boilers were replaced with energy efficient staged boiler systems. Lamps and ballasts were replaced with lower energy use models. DDCs were installed and air treatment was regulated. Variable speed HVAC units were installation that used digital controls. Replacing the windows at the Red Lake Hospital with triple pane thermal windows.
- Navajo: In current renovation projects boilers have been replaced with energy efficient boilers, cooling towers have been replaced with energy efficient cooling towers that require less energy at start up. Flat plate heat exchanges have been installed.
- Oklahoma City: A study was performed in a prior fiscal year at the W.W. Hastings Indian Hospital in Tahlequah to determine the adequacy of both the mechanical and electrical systems and the findings of this study will be considered to set priorities and make decisions on future equipment upgrades. Windows at the Creek Nation Community Hospital were replaced in FY 03. The windows in the eye clinic, general medical clinic, and the north wing of the hospital were installed in 1948 while the windows in the medical records area and the west wing of the hospital were installed in 1968. Fifty-two single pane windows with steel sashes were replaced with double pane tinted glass windows and thermally broken aluminum frames. Windows with half screens were provided for patient rooms. The following was accomplished in FY03 at the Claremore Indian Hospital: (2) 400 ton constant speed centrifugal chillers operating at approximately .864 kW per ton were replaced with (2) 300 ton variable speed centrifugal chillers operating at .646 kW per ton; (1) 2,442 gallon per minute two-cell 800 ton cooling tower with (2) 25 hp constant speed fan motors was

replaced with (1) 1,800 gallon per minute two-cell 600 ton cooling tower with (2) 20 hp variable speed drive fan motors; (2) 1221gallon per minute 20 hp constant speed condenser water pumps were replaced with (2) 900 gallon per minute 10 hp constant speed condenser water pumps; (2) 630 gallon per minute 40 hp constant speed chilled water pumps were replaced with (2) 600 gallon per minute 7.5 hp constant speed chiller (primary) water pumps and (2) 1,100 gallon per minute 50 hp variable speed drive building distribution (secondary) pumps with only one operating at a time; and 3-way control valves at air-handling units #3,4, and 1A were replaced with 2-way control valves. Benefits of this major chilled water plant upgrade include a more consistent condenser water supply temperature to the chiller and a much better ability to efficiently provide the amount of cooling needed at part load which is where this building operates most of the hours of the year.

Portland: Periodic energy audits are the primary implementation strategy used to determine and fund energy saving opportunities.

Tucson: In FY 2003, work began on an energy audit that will incorporate LEED for Existing Building criteria. It is anticipated that projects will be identified in 2004 and incorporated into new and existing projects.

I. Highly Efficient Systems

Alaska: A ground water cooling (GWC) project was completed at the Alaska Native Medical Center in Anchorage (ANMC). The energy savings is anticipated to reflect in an approximate \$50,000 annual savings to the ANMC. Investigation of application of other GWC projects at various locations in the state is anticipated.

Oklahoma City: Local natural resources were identified and a vertical closed-loop ground source heat pump system was designed for the new Pawnee Health Center which enables this facility to take advantage of the natural heat stored underground to provide space conditioning. Status indicators for this system are from positive feedback monitoring devices.

Phoenix: Installed a flat plate heat exchanger at Whiteriver hospital

Portland: A Geothermal study was conducted at the Yakama Service Unit. While geothermal evaluations showed a cost effective alternative for a new HVAC system, a retrofit or replacement HVAC system is not a cost effective alternative.

J. Off-Grid Generation

Alaska: YKHC is pursuing a feasibility study for a wind turbine application at the Bethel Hospital and other Yukon Delta community clinics.

Bemidji: Installation of off-grid power generation at White Earth Health Center was completed in 2004. An off grid generator was also added at the Ponehma Health Center on the Red Lake Reservation.

Oklahoma City: Although no off-grid generation capability was installed in the OKC Area, installation of small wind turbines were identified during energy audits of 8 facilities. Energy saving estimates varied in terms of kWh per year and dollar savings, along with implementation costs. Payback periods ranged from 24 to 68 years.

K. Electrical Load Reduction Measures

Alaska: Most facilities in Alaska have automatic load management systems to address load reduction during electrical outages/emergencies. Specific measures were implemented at ANMC to reduce non-essential loads to further reduce the peak load of the facility. Similar techniques were accomplished at other hospital

	locations as well. The DDC systems assist with non-emergency load management also.
Albuquerque:	Each service unit has emergency load reduction plans for their facilities.
Billings:	Gas Generators are installed at most of the major facilities and can be utilized in the event of a power emergency.
Oklahoma City:	Emergency generators are available at some facilities. Manual transfer switches could be used to power more, but not all, of a health facility in the event of a power emergency.
Phoenix:	The area office will alert all service units within the area when energy reduction is needed. The service units will load the emergency generators, adjust thermostats, shut down all unnecessary and nonessential equipments, turn off lights, etc.
Portland:	Upon notification of a power emergency, the Portland Area Office will alert all Federal IHS Facilities within the Portland Area. The facilities will adjust building temperatures, turn off lights, and shutting down other nonessential equipment.
Tucson:	During power emergencies, all non-essential personnel will be dismissed and power consumption in affected buildings greatly reduced. The critical facilities will remain operational but with temperature thermostats adjusted to reduce energy.

L. Maintenance Technologies

Albuquerque:	An infrared thermographic camera was used at the Zuni Hospital to assist with establishing MP7i and to assess water damage to the roofing system. It was also used at the Albuquerque and ACL hospitals to review the condition of the roofing systems. These assessments aided in procuring a contract for an area wide Roof Conditions Survey. The findings from the roof survey are now being used to prioritize reroofing projects for all of our facilities.
Billings:	Thermographic analysis was performed at the Ft. Belknap Hospital, Crow Hospital, and the Lame Deer Clinic during the DOE's last energy audits in 2003-4. The analysis concluded that all of the facilities were of tight construction and made of excellent energy efficient materials.
Oklahoma City:	The OKC Area had Infrared Thermographic analysis (roofs and electrical panels) and Vibration analysis (motors & fans) done at 8 facilities in order to find more energy saving opportunities. Vibration "signatures" were examined and compared to known signatures of problems. A life cycle cost analysis for the purchase of infrared thermography and vibration analysis equipment for use at our facilities was also completed.

IV. Data Tables and Inventories

A. FY 2004 OPDIV Energy Management Data Report

See Attachment A.

B. OPDIV FY 2004 Energy Scorecard

See Attachment B.

D. Industrial and Laboratory Facilities Inventory

Attachment D includes a list of federally owned installations with the number of buildings not including quarters and total installation size.

November 12, 2004

E. Exempt Facilities Inventory

Attachment E includes a list of federally owned Installations with quarters and the number of quarters units and total size at each installation.

Attachment A

FY 2004 OPDIV Energy Management Data Report

FY 2004 ENERGY MANAGEMENT DATA REPORT

OPDIV: Indian Health Service
 Date: 11/10/2004

Prepared by: Allen Bollinger
 Phone: 301-443-1367

PART 1: ENERGY CONSUMPTION AND COST DATA

1-1. Standard Buildings/Facilities

Energy Type	Consumption Units	Annual Consumption	Annual Cost (Thou. \$)	Unit Cost (\$)	Site-Delivered Btu (Million)	Est. Source Btu (Million)	Est. Carbon Emissions (Metric Tons)
Electricity	kWH	0.0	\$0.0	#DIV/0! /kWh	0.0	0.0	0
Fuel Oil	Thou. Gal.	0.0	\$0.0	#DIV/0! /gallon	0.0	0.0	0
Natural Gas	Thou. Cubic Ft.	0.0	\$0.0	#DIV/0! /Thou Cu Ft	0.0	0.0	0
LPG/Propane	Thou. Gal.	0.0	\$0.0	#DIV/0! /gallon	0.0	0.0	0
Coal	S. Ton	0.0	\$0.0	#DIV/0! /S. Ton	0.0	0.0	0
Purch. Steam	BBtu	0.0	\$0.0	#DIV/0! /MMBtu	0.0	0.0	0
Other	BBtu	0.0	\$0.0	#DIV/0! /MMBtu	0.0	0.0	0
		Total Costs:	\$0.0	Total:		0.0	0
Standard Buildings/Facilities (Thou. Gross Square Feet)		0.0	Btu/GSF:		#DIV/0!	#DIV/0!	

1-2. Industrial, Laboratory, Research, and Other Energy-Intensive Facilities

Energy Type	Consumption Units	Annual Consumption	Annual Cost (Thou. \$)	Unit Cost (\$)	Site-Delivered Btu (Million)	Est. Source Btu (Million)	Est. Carbon Emissions (Metric Tons)
Electricity	kWH	162,739,210.0	\$10,449.0	\$0.00 /kWh	555,266.2	1,928,459.6	27,335,754
Fuel Oil	Thou. Gal.	1,199.2	\$1,777.0	\$1.48 /gallon	166,329.0	166,329.0	3,318
Natural Gas	Thou. Cubic Ft.	372,084.2	\$2,051.0	\$5.51 /Thou Cu Ft	383,619.0	383,619.0	5,551
LPG/Propane	Thou. Gal.	622.1	\$661.0	\$1.06 /gallon	59,411.0	59,411.0	1,009
Coal	S. Ton	0.0	\$0.0	#DIV/0! /S. Ton	0.0	0.0	0
Purch. Steam	BBtu	0.0	\$0.0	#DIV/0! /MMBtu	0.0	0.0	0
Other	BBtu	0.0	\$0.0	#DIV/0! /MMBtu	0.0	0.0	0
		Total Costs:	\$14,938.0	Total:		1,164,625.2	27,345,633
Energy-Intensive Facilities (Thou. Gross Square Feet)		6,445,798.0	Btu/GSF:		180,680	393,717	

1-3. Exempt Facilities

Energy Type	Consumption Units	Annual Consumption	Annual Cost (Thou. \$)	Unit Cost (\$)	Site-Delivered Btu (Million)	Est. Source Btu (Million)	Est. Carbon Emissions (Metric Tons)
Electricity	kWH	0.0	\$0.0	#DIV/0! /kWh	0.0	0.0	0
Fuel Oil	Thou. Gal.	0.0	\$0.0	#DIV/0! /gallon	0.0	0.0	0
Natural Gas	Thou. Cubic Ft.	0.0	\$0.0	#DIV/0! /Thou Cu Ft	0.0	0.0	0
LPG/Propane	Thou. Gal.	0.0	\$0.0	#DIV/0! /gallon	0.0	0.0	0
Coal	S. Ton	0.0	\$0.0	#DIV/0! /S. Ton	0.0	0.0	0
Purch. Steam	BBtu	0.0	\$0.0	#DIV/0! /MMBtu	0.0	0.0	0
Other	BBtu	0.0	\$0.0	#DIV/0! /MMBtu	0.0	0.0	
		Total Costs:	\$0.0	Total:	0.0	0.0	0
Exempt Facilities (Thou. Gross Square Feet)		0.0		Btu/GSF:	#DIV/0!	#DIV/0!	

1-4. Non-Fleet Vehicles and Other Equipment

	Consumption Units	Annual Consumption	Annual Cost (Thou. \$)	Unit Cost (\$)	Btu (Billion)	Est. Carbon Emissions (Metric Tons)
Auto Gasoline	Thou. Gal.	0.0	\$0.0	#DIV/0! /gallon	0.0	0
Diesel-Distillate	Thou. Gal.	0.0	\$0.0	#DIV/0! /gallon	0.0	0
LPG/Propane	Thou. Gal.	0.0	\$0.0	#DIV/0! /gallon	0.0	0
Aviation Gasoline	Thou. Gal.	0.0	\$0.0	#DIV/0! /gallon	0.0	0
Jet Fuel	Thou. Gal.	0.0	\$0.0	#DIV/0! /gallon	0.0	0
Navy Special	Thou. Gal.	0.0	\$0.0	#DIV/0! /gallon	0.0	0
Other	Thou. Gal.	0.0	\$0.0	#DIV/0! /MMBtu	0.0	
		Total Costs	\$0.0		0.0	0

1-5. WATER CONSUMPTION, COST AND EFFICIENCY MEASURES

	Consumption Units	Annual Consumption	Annual Cost (Thou. \$)
Water	Million Gal.	260.4	\$736.7
Best Management Practice Implementation Tracking Data			
Number of facilities* in agency inventory			168
Number of facilities with completed water management plans			Unknown
Number of facilities with at least four (4) BMPs fully implemented			Unknown
*number in the agency inventory, can be buildings, bases, or campuses			

1-6. RENEWABLE GREEN ENERGY PURCHASES

(Only include renewable energy purchases developed or contracted after 1990)

	Consumption Units	Annual Consumption	Annual Cost (Thou. \$)
Electricity from Renewables	MWH	0.0	\$0.0
Natural Gas from Landfill/Biomass	MMBtu	0.0	\$0.0
Renewable Thermal Energy	MMBtu	12,219.0	\$155.0
Other Renewable Energy *			

*For other renewable energy that does not fit any category, please fill in the type, units used, annual consumption and cost, and include any additional information in your narrative submission. For example, biodiesel used in non-transportation applications. (Renewable fuels used for transportation will be collected through GSA's Fleet Management reporting process.)

1-7. SELF-GENERATED RENEWABLE ENERGY INSTALLED AFTER 1990

	Consumption Units	Total Annual Energy	Energy Used by Agency*
Electricity from Renewables	MWH	0.0	0.0
Natural Gas from Landfill/Biomass	MMBtu	0.0	0.0
Renewable Thermal Energy**	MMBtu	0.0	0.0
Other Renewable Energy ***		0.0	0.0

*Energy used by agency equals total annual generation unless a project sells a portion of the energy it produces to another agency or the private sector. It can equal zero in the case of non-Federal energy projects developed on Federal land.

**Examples are geothermal, solar thermal, and geothermal heat pumps, and the thermal portion of combined heat and power projects. Thermal energy from geothermal heat pumps should be based on energy savings compared to conventional alternatives.

***For other renewable energy that does not fit any category, fill in the type, units used, annual consumption and cost, and include any additional information in your narrative submission. For example energy displaced by daylighting technology or passive solar design.

PART 2: ENERGY EFFICIENCY IMPROVEMENTS

2-1. DIRECT AGENCY OBLIGATIONS

	FY 2004		Projected FY 2005	
	(MMBTU)	(Thou. \$)	(MMBTU)	(Thou. \$)
Direct obligations for facility energy efficiency improvements, including facility surveys/audits		\$0.0		\$0.0
Estimated annual savings anticipated from obligations	0.0	\$0.0	0.0	\$0.0

2-2. ENERGY SAVINGS PERFORMANCE CONTRACTS (ESPC)

	Annual savings (MMBTU)	(number/Thou. \$)
Number of ESPC Task/Delivery Orders awarded in fiscal year & annual energy (MMBTU) savings.	23,374.01	\$1,900
Investment value of ESPC Task/Delivery Orders awarded in fiscal year.		\$58.0
Amount privately financed under ESPC Task/Delivery Orders awarded in fiscal year.		\$381.0
Cumulative guaranteed cost savings of ESPCs awarded in fiscal year relative to the baseline spending.		\$0.0
Total contract award value of ESPCs awarded in fiscal year (sum of contractor payments for debt repayment, M&V, and other negotiated performance period services).		\$288.0
Total payments made to all ESP contractors in fiscal year.		\$288.0

2-3. UTILITY ENERGY SERVICES CONTRACTS (UESC)

	Annual savings (MMBTU)	(number/Thou. \$)
Number of UESC Task/Delivery Orders awarded in fiscal year & annual energy (MMBTU) savings.	0.0	0
Investment value of UESC Task/Delivery Orders awarded in fiscal year.		\$0.0
Amount privately financed under UESC Task/Delivery Orders awarded in fiscal year.		\$0.0
Cumulative cost savings of UESCs awarded in fiscal year relative to the baseline spending.		\$0.0
Total contract award value of UESCs awarded in fiscal year (sum of payments for debt repayment and other negotiated performance period services).		\$0.0
Total payments made to all UESC contractors in fiscal year.		\$0.0

2-4. UTILITY INCENTIVES (REBATES)

	Annual savings (MMBTU)	(Thou. \$)
Incentives received and estimated energy savings	0.0	\$0.0
Funds spent in order to receive incentives		\$0.0

2-5. TRAINING

	(number)	(Thou. \$)
Number of personnel trained/Expenditure	38	\$56.0

Attachment B

OPDIV FY 2004 Energy Scorecard

FY 2004 OPDIV Energy Scorecard

OPDIV Name	Contact Name and Phone
Indian Health Service	Allen Bollinger 301-443-1367
Name of Senior Energy Official	Signature of Senior Energy Official
Kevin Stover, P.E.	

Did your OPDIV . . .	Yes	No	Anticipated Submittal Date																								
1. Submit its FY 2004 energy report to OMB and DOE by January 1, 2005 (Sec. 303)?	X		November 12, 2004																								
2. Submit a FY 2005 Implementation Plan by January 1, 2005 (Sec. 302)?	X		November 12, 2004																								
Did your OPDIV . . .	Yes	No	Comments																								
3. Implement or continue to use renewable energy projects at Federal installations or facilitate the siting of renewable generation on Federal land in FY 2004 (Sec. 204)? (Report all self-generated renewable energy from projects installed after 1990; refer to Table 1-7 on the Energy Management Data Report)	X		<p>If yes, how many projects and how much energy generated? (Specify unit: MWH or MMBtu)</p> <table> <tr> <td></td><td># Projects</td><td>Energy</td><td>Unit</td></tr> <tr> <td>Solar</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr> <td>Wind</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr> <td>Thermal¹</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr> <td>Biomass</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr> <td>Other RE</td><td>_____</td><td>_____</td><td>_____</td></tr> </table>		# Projects	Energy	Unit	Solar	_____	_____	_____	Wind	_____	_____	_____	Thermal ¹	_____	_____	_____	Biomass	_____	_____	_____	Other RE	_____	_____	_____
	# Projects	Energy	Unit																								
Solar	_____	_____	_____																								
Wind	_____	_____	_____																								
Thermal ¹	_____	_____	_____																								
Biomass	_____	_____	_____																								
Other RE	_____	_____	_____																								
4. Purchase energy generated from new renewable energy sources in FY 2004 (Sec. 204)? ²	X		<p>If yes, how much: _____ MWH or _____ 12,219 MMBtu</p>																								
5. Invest direct FY 2004 appropriations in projects contributing to the goals of the Order (Sec. 301)?		X	<p>If yes, how much: \$ _____</p>																								
6. Specifically request funding necessary to achieve the goals of the Order in its FY 2006 budget request to OMB (Sec. 301)? (Refer to OMB Circular A-11, Section 25.5, Table 2)		X	<p>If yes, how much: \$ _____</p>																								
7. Perform energy audits of 10% of its facility space during the fiscal year (Sec. 402)?	X		<p>What percentage of facility space was audited during the FY? <u>11</u> % How much facility space has been audited since 1992?³ <u>70</u> %</p>																								
8. Issue to private-sector energy service companies (ESCOs) any energy savings performance contract (ESPC) delivery orders (Sec. 403(a))? (Refer to Table 2-2 on the Energy Management Data Report) ⁴	X		<p>How many? <u>1</u> Annual savings (MMBtu): <u>23,374</u> Total investment value⁵: \$ <u>1.9 Mil</u> Cumulative guaranteed cost savings: \$ <u>669,000</u> Award value: \$ <u>288,000</u></p>																								

¹ Examples are geothermal, solar thermal, and geothermal heat pumps. Thermal energy from geothermal heat pumps should be determined as follows: Thermal energy = Total geothermal heat transferred – electrical energy used.

² “New” renewable energy means sources developed after 1990.

³ Should be greater than 100% if all facility space has been audited at least once since 1992.

⁴ Although ESPC authority expired October 1, 2003, some agencies may have signed delivery orders under existing contracts.

⁵ Investment value includes design, materials, labor, overhead, and profit but excludes contractor’s financing costs and government’s administration costs. Using investment value allows comparison with other traditional execution methods such as appropriated and working capital funded projects.

Did your OPDIV . . .	Yes	No	Comments
9. Issue any utility energy services contract (UESC) delivery orders (Sec. 403(a))? (Refer to Table 2-3 on the Energy Management Data Report)		X	How many? _____ Annual savings (MMBtu): _____ Total investment value ³ : \$ _____ Cumulative cost savings: \$ _____ Award value: \$ _____
10. Incorporate energy efficiency requirements into relevant acquisitions (Sec. 403(b)(3))?	X		
11. Adopt and apply the sustainable design principles (e.g., Whole Building Design Guide, Leadership in Energy and Environmental Design (LEED)) to the siting, design, and construction of new facilities or major (budget line item) renovations begun in FY 2004 (Sec. 403(d))?	X		Number of new building (or major renovation) design/construction projects in FY 2004 ⁶ : <u>6</u> Number of these projects that can or will be certified under LEED ⁶ : <u>6</u>
12. Provide training to appropriate personnel ⁷ on energy management (Sec. 406(d))?	X		Number of appropriate personnel trained: <u>37</u> Total number of appropriate personnel: <u>250</u>
13. Implement any additional management tools (Sec. 406)?	X		Check all that apply: Awards: <u>X</u> Performance Evaluations: <u>X</u> Showcase Facilities: <u>X</u> Number of Showcase Facilities designated in fiscal year: _____
14. Establish Water Management Plans (WMPs) and implement at least 4 Best Management Practices (BMPs) in at least 10% of agency facilities (Sec. 207, 503(f))?		X	Number of facilities with WMPs and 4 BMPs: <u>Unknown</u> Number of facilities in agency inventory: <u>168</u>

NOTE: Provide additional information below if a “No” reply is used for any of the questions above.

5&6: No budget request has been made to specifically address energy efficiency projects. Other source of fund such as Maintenance and Improvement (M&I), Medicare and Medicaid (M&M), and Quarters Return (QR) are used to complete energy projects.

9: IHS has a hard time establishing USECs and ESPCs due to the possibility that a tribe may requests to take ownership of federal properties under public law 93-638.

14: IHS Headquarters has distributed WMP and BMP information to all area offices. There is no current reporting mechanism to determine the number of facilities using WMPs and BMPs.

⁶ Count projects only once, regardless of phase. For example, if in FY 2004, your agency had 10 new building or major renovation projects, of which 2 can be LEED certified, then report 10 and 2, respectively, in the spaces provided. If the project was designed and reported on in response to this question in a previous year, do not report it as a new project in FY 2004, even if construction commenced or continued in FY 2004.

⁷ Appropriate personnel include the agency energy management team as well as Federal employees and on-site contractors who are energy or facility managers, operations and maintenance workers, design personnel, procurement and budget staff, and legal counsel.

Please enter data from annual energy report pertinent to performance toward the goals of Executive Order 13123	Base Year	Previous Year (2003)	Current Year (2004)	% Change (Current vs. Base)
15. Site Energy Efficiency Improvement Goals (Sec. 202). 1985 Base Year	Btu/Ft ²	Btu/Ft ²	Btu/Ft ²	%
16. Industrial/Energy Intensive Facilities Goals (Sec. 203). 1990 Base Year	242,633 Btu/Ft ²	199,616 Btu/ Ft ²	180,680 Btu/ Ft ²	26%
17. Source Energy Use (Sec. 206). 1985 Base Year	BBtu	BBtu	BBtu	%
18. Water Conservation Goal (Sec. 207). 2000 Base Year	MGal	250 MGal	260.4 MGal	%
19. Renewable Energy (Sec. 204) Energy used from self-generation and RE purchases	N/A	19,807 BBtu	12,219 BBtu	N/A

Abbreviation Key: Btu/Ft² = British thermal units per gross square foot

Btu/unit = British thermal units per unit of productivity (or gross square foot when such a unit is inappropriate or unavailable)

MGal = Million gallons

MMBtu = Million British Thermal Units

BBtu = Billion British Thermal Units

RE = Renewable energy

N/A = Not applicable

Attachment D

Industrial and Laboratory Facilities Inventory

Area	Installation #	Installation Name	Last Energy Audit	Number Of Bldgs	GSF
Aberdeen	11522	QUENTIN N BURDICK MEMORIAL HOS BELCOURT, ND	1995	5	102,832
Aberdeen	20605	PHS Indian Health Station CANNON BALL, ND		1	1,380
Aberdeen	11523	PHS Indian Health Center FORT TOTTEN, ND		2	4,089
Aberdeen	41244	Fort Totten FORT TOTTEN, ND		1	13,380
Aberdeen	11524	PHS Indian Hospital FORT YATES, ND	1995	9	45,697
Aberdeen	20606	PHS Indian Health Station MANDAREE, ND		1	1,381
Aberdeen	11525	PHS Indian Health Center NEW TOWN, ND	1995	4	16,842
Aberdeen	20607	PHS Indian Health Station TWINBUTTES, ND		1	1,380
Aberdeen	11506	PHS Indian Hospital WINNEBAGO, NE	1997	7	38,070
Aberdeen	13510	PHS Indian Health Station ALLEN, SD		1	960
Aberdeen	13511	PHS Indian Health Station BULLHEAD, SD		1	960
Aberdeen	20148	PHS Indian Health Station CHERRY CREEK, SD		2	3,264
Aberdeen	13170	PHS Indian Hospital EAGLE BUTTE, SD	2002	6	31,827
Aberdeen	16180	PHS Indian Health Center FORT THOMPSON, SD	1995	1	19,783
Aberdeen	12669	PHS Indian Health Center KYLE, SD	1995	2	19,730
Aberdeen	20608	PHS Indian Health Center LOWER BRULE, SD		2	13,335
Aberdeen	12670	PHS Indian Health Station MANDERSON, SD		2	1,856
Aberdeen	15386	PHS Indian Health Center MCLAUGHLIN, SD	1983	3	8,630
Aberdeen	41235	PHS Indian Hospital PINE RIDGE, SD		4	133,101
Aberdeen	11545	PHS Institutional Support Fac PINE RIDGE, SD	1995	4	54,390
Aberdeen	11546	PHS Indian Hospital RAPID CITY, SD	1982	27	111,868
Aberdeen	13509	PHS Indian Health Station RED SCAFFOLD, SD	1982	1	960
Aberdeen	11547	PHS Institutional Support Fac ROSEBUD, SD		6	47,757
Aberdeen	41237	PHS Indian Hospital ROSEBUD, SD		2	95,807
Aberdeen	11548	PHS Indian Hospital SISSETON, SD	1995	12	31,465
Aberdeen	14671	PHS Indian Health Station SWIFTBIRD, SD		1	1,920
Aberdeen	11549	IHS Wagner Health Center WAGNER, SD	1995	3	36,774
Aberdeen	14669	PHS Indian Health Station WAKPALA, SD		2	3,840
Aberdeen	41236	AberdeenERDEEN AREA YRTC WAKPALA, SD		1	31,484
Aberdeen	13508	PHS Indian Health Center WANBLEE, SD	1983	3	10,112
Aberdeen	20149	PHS Indian Health Station WHITE HORSE, SD		1	2,368
Alaska	60634	PHS Institutional Support Fac ANCHORAGE, AK		10	12,722
Alaska	37561	PHS Indian Medical Center ANCHORAGE, AK	2002	2	382,819
Alaska	30555	ANIAC HEALTH CTR ANIAC, AK		1	1,288
Alaska	61087	PHS Indian Hospital BARROW, AK	2002	5	42,951
Alaska	61088	PHS Indian Hospital BETHEL, AK	2002	11	120,179
Alaska	61093	Kanakanak IHS Hospital DILLINGHAM, AK	2001	14	91,702
Alaska	61090	PHS Indian Health Station GAMBELL, AK		1	1,048
Alaska	20145	PHS Indian Health Station HOOPER BAY, AK		1	1,048
Alaska	41232	KIC Quarters Site KOTZEBUE, AK		2	1,732
Alaska	41231	ALASKA NATIVE HOSPITAL KOTZEBUE, AK	2000	2	82,411
Alaska	30554	PHS Indian Health Station NOORVIK, AK		1	884
Alaska	61095	Former Nulato Clinic NULATO, AK		1	910
Alaska	61096	PHS Indian Health Station SAVOONGA, AK		1	884
Alaska	30064	PHS Indian Health Station SELAWIK, AK		1	884
Alaska	61092	Mt. Edgecumbe IHS Hospital SITKA, AK	2002	19	196,945
Alaska	61097	PHS Indian Health Station TANANA, AK		11	35,296
Alaska	61098	PHS Indian Health Station UNALAKLEET, AK		1	1,400
Albuquerque	11508	PHS Indian Hospital ALBUQUERQUE, NM	1981	9	80,359
Albuquerque	31103	SIPI Indian Dental Center ALBUQUERQUE, NM	2004	2	13,987
Albuquerque	11512	PHS Indian Health Center DULCE, NM		2	3,984
Albuquerque	15383	IHS IND HEALTH CENTER JEMEZ PUEBLO, NM		1	896
Albuquerque	11982	PHS Indian Health Station LAGUNA, NM	1997	3	6,628
Albuquerque	37558	PHS Indian Health Center MAGDALENA, NM		1	11,535
Albuquerque	11514	PHS Indian Hospital MESCALERO, NM	1997	4	25,730
Albuquerque	30066	PHS Indian Health Station SAN FELIPE PUEBLO, NM		1	2,440
Albuquerque	33115	PHS Indian Hospital SAN FIDEL, NM	2004	2	61,845
Albuquerque	37562	NEW SUNRISE REG TREATMENT CTR SAN FIDEL, NM	1997	5	13,984
Albuquerque	11516	PHS Indian Hospital SANTA FE, NM	1997	8	99,918
Albuquerque	11986	PHS Indian Health Station SANTO DOMINGO PUEBLO, NM		2	3,528
Albuquerque	41228	PHS Indian Health Center TAOS PUEBLO, NM	1997	1	19,981
Albuquerque	11520	PHS Indian Hospital ZUNI, NM	1997	5	77,819
Bemidji	11494	PHS Indian Hospital CASS LAKE, MN	1994	7	52,746
Bemidji	11496	PHS Indian Health Center NAYTAHWAUSH, MN		1	6,145
Bemidji	12664	PHS Indian Health Center PONEMAH, MN	1994	1	6,492
Bemidji	11497	Pine Point Health Center PONSFORD, MN		2	3,360
Bemidji	11498	CHIEF LEADING FEATHER HOSPITAL RED LAKE, MN	1994	2	80,224

Bemidji	11499	PHS Institutional Support Fac WHITE EARTH, MN		2	1,670
Bemidji	41230	PHS Indian Health Center WHITE EARTH, MN		1	76,611
Billings	11501	PHS Indian Hospital BROWNING, MT	2001	12	145,557
Billings	11502	PHS Indian Hospital CROW AGENCY, MT	2004	7	125,173
Billings	11503	PHS Indian Hospital-FT BELKNAP HARLEM, MT	2003	8	80,552
Billings	12665	PHS Indian Health Center HAYS, MT		2	15,159
Billings	16175	PHS Indian Health Center HEART BUTTE, MT	1982	2	9,002
Billings	11504	No. Cheyenne Health Ctr LAME DEER, MT	2003	5	65,252
Billings	11505	PHS Institutional Support Fac POPLAR, MT		6	6,774
Billings	14673	PHS Indian Health Center PRYOR, MT	2003	2	10,620
Billings	12679	PHS Institutional Support Fac ROCKY BOYS, MT		3	1,368
Billings	20146	PHS Indian Health Center WOLF POINT, MT		2	20,610
Billings	16181	PHS Indian Health Center ARAPAHOE, WY	2003	3	17,214
Billings	11556	PHS Institutional Support Fac FORT WASHAKIE, WY	2003	5	23,530
Nashville	32061	PHS Indian Health Station CARTHAGE, MS	2002	1	2,440
Nashville	32070	PHS Indian Hospital PHILADELPHIA, MS	2002	2	58,048
Nashville	11500	PHS Institutional Support Fac PHILADELPHIA, MS	2002	1	2,400
Nashville	41222	NASHVILLE AREA YRTC CHEROKEE, NC	2002	2	13,331
Nashville	41223	NASHVILLE AREA ADMINISTRATION CHEROKEE, NC	2002	1	2,400
Navajo	11468	PHS Indian Hospital CHINLE, AZ	1999	2	108,512
Navajo	15381	PHS Indian Health Station DENNEHOTSO, AZ	1983	1	1,262
Navajo	30553	PHS Indian Health Station DILKON, AZ		2	4,016
Navajo	11469	PHS Indian Hospital FORT DEFIANCE, AZ		20	107,791
Navajo	41248	Ft. Defiance Hospital-New FORT DEFIANCE, AZ	2004	1	253,656
Navajo	20393	PHS Indian Health Station GREASEWOOD, AZ	1979	1	2,526
Navajo	19718	PHS Indian Health Station HOTEVILLA DINNEBITO, AZ	1979	1	1,262
Navajo	35774	PHS Indian Health Center INSCRIPTION HOUSE, AZ	1999	1	19,480
Navajo	11974	PHS Indian Health Center KAYENTA, AZ	1999	13	27,716
Navajo	14677	PHS Indian Health Station LEUPP, AZ		3	4,660
Navajo	16171	PHS Indian Health Center MANY FARMS ROUGH ROCK, AZ	1999	1	13,068
Navajo	20396	PHS Indian Health Station MANY FARMS ROUGH ROCK, AZ		1	1,265
Navajo	11976	PHS Indian Health Station PINON, AZ	1999	2	5,077
Navajo	30552	PHS Indian Health Station ROCK POINT, AZ		1	3,300
Navajo	30550	PHS Indian Health Center TEEC NOS POS, AZ		1	5,519
Navajo	37554	PHS Indian Health Center TSAILE, AZ	1999	2	19,807
Navajo	11483	PHS Indian Hospital TUBA CITY, AZ	1998	3	155,916
Navajo	11485	PHS Institutional Support Fac WINDOW ROCK, AZ	1983	3	9,718
Navajo	11486	PHS Indian Health Center WINSLOW, AZ	2000	12	37,801
Navajo	11511	PHS Indian Hospital CROWNPOINT PUEB PINT, NM	1997	7	89,183
Navajo	11980	PHS Indian Health Station CROWNPOINT PUEB PINT, NM	1997	3	4,531
Navajo	20399	PHS Indian Health Center FORT WINGATE, NM	1999	1	7,656
Navajo	11969	PHS Indian Medical Center GALLUP, NM	1998	14	173,549
Navajo	35775	PHS Indian Health Center HUERFANO (NAGEEZI), NM	1999	1	17,322
Navajo	30549	PHS Indian Health Center SANOSTEE, NM		1	2,528
Navajo	11517	PHS Institutional Support Fac SHIPROCK, NM	1999	5	44,471
Navajo	41238	NORTHERN NAVAJO MEDICAL CENTER SHIPROCK, NM		3	215,447
Navajo	19713	PHS Indian Health Station TOADLENA, NM		1	1,262
Navajo	11519	PHS Indian Health Center TOHATCHI, NM		6	46,842
Oklahoma City	11493	PHS Indian School Health Ctr LAWRENCE, KS	2004	2	15,992
Oklahoma City	37552	PHS Indian Health Center ANADARKO, OK	2003	1	20,000
Oklahoma City	11528	PHS Indian Hospital CLAREMORE, OK	2004	7	107,423
Oklahoma City	11529	PHS Indian Hospital CLINTON, OK	2004	11	27,677
Oklahoma City	11533	PHS Indian Hospital LAWTON, OK	2003	8	88,969
Oklahoma City	11534	PHS Indian Health Center PAWNEE, OK	2004	7	28,137
Oklahoma City	41246	New Pawnee Health Center PAWNEE, OK		1	68,832
Oklahoma City	37563	Redbird Smith Health Center SALLISAW, OK		2	22,930
Oklahoma City	41229	Wilma P. Mankiller Health Ctr STILWELL, OK		2	37,359
Oklahoma City	11537	PHS Institutional Support Fac TAHLEQUAH, OK	2004	2	9,410
Oklahoma City	37553	W. W. Hastings Hospital TAHLEQUAH, OK	2004	3	147,831
Oklahoma City	11536	PHS Institutional Support Fac TALIHINA, OK	1985	8	134,750
Phoenix	12660	PHS Indian Health Center BYLAS, AZ		2	2,136
Phoenix	11476	PHS Indian Health Station CASA BLANCA (GRANDE), AZ		1	1,320
Phoenix	33113	PHS Indian Health Center GIBECUE, AZ	1983	1	133,844
Phoenix	12661	PHS Indian Health Station HOTEVILLA DINNEBITO, AZ		1	702
Phoenix	41241	DENTAL CLINIC JEDDITO, AZ		1	2,262
Phoenix	11470	PHS Institutional Support Fac KEAMS CANYON, AZ		13	46,358
Phoenix	12676	PHS Indian Health Center LAVEEN, AZ		1	2,900
Phoenix	11472	PHS Indian Hospital PARKER, AZ	1982	2	76,136

Phoenix	11975	PHS Indian Health Center PEACH SPRINGS, AZ		2	5,740
Phoenix	11473	PHS Indian Medical Center PHOENIX, AZ	2001	25	261,316
Phoenix	41239	Hopi Health Center POLACCA, AZ		1	96,840
Phoenix	11475	PHS Indian Hospital SACATON, AZ		6	123,177
Phoenix	41216	GILA RIVER YRTC SACATON, AZ		6	39,561
Phoenix	11477	PHS Indian Hospital SAN CARLOS, AZ	2001	10	49,554
Phoenix	37565	PHS Indian Health Station SUPAI CANYON, AZ		1	2,160
Phoenix	11484	PHS Indian Hospital WHITERIVER, AZ	2001	6	114,897
Phoenix	12677	PHS Indian School Health Ctr RIVERSIDE, CA		1	3,700
Phoenix	11488	PHS Indian Hospital WINTERHAVEN, CA	1982	9	21,766
Phoenix	33114	PHS Indian Health Center MCDERMITT, NV	1983	1	2,590
Phoenix	41242	PHS Indian Health Station MOAPA, NV		1	3,605
Phoenix	11507	PHS Indian Hospital OWYHEE, NV	2001	6	44,447
Phoenix	11480	PHS Indian Health Center SCHURZ, NV		6	19,286
Phoenix	11550	PHS Indian Health Center FORT DUCHESNE, UT	2001	4	17,416
Portland	11491	PHS Indian Health Center FORT HALL, ID	2003	3	30,488
Portland	11540	PHS Indian Health Center CHEMAWA (Salem), OR	2003	3	23,124
Portland	11542	PHS Indian Health Center WARM SPRINGS, OR	1997	1	576
Portland	30067	PHS Indian Health Center NEAH BAY, WA	2003	5	9,853
Portland	11551	PHS Indian Health Center NESPELEM, WA	1997	5	24,941
Portland	41217	HEALING LODGE OF THE SEVEN NAT SPOKANE, WA	1995	4	31,000
Portland	35776	PHS Indian Health Center TACOMA, WA	2002	1	42,347
Portland	19712	PHS Indian Health Center TOPPENISH, WA	2004	4	51,772
Portland	37569	TULALIP DENTAL CLINIC TULALIP, WA	2003	1	1,960
Portland	11553	PHS Indian Health Center WELLPINIT, WA	2003	4	26,024
Tucson	41234	PHS Indian Health Station PISINEMO, AZ		1	1,134
Tucson	11479	Health Center &AreaOffice SAN XAVIER, AZ	1982	24	54,642
Tucson	11478	PHS Indian Health Center SANTA ROSA, AZ	1982	1	3,733
Tucson	11482	PHS Indian Hospital SELLS, AZ	2004	27	82,824

Attachment E

Exempt Facilities Inventory

Area	Installation #	Installation Name	Number of Bldgs	GSF
Aberdeen	11522	QUENTIN N BURDICK MEMORIAL HOS BELCOURT, ND	91	93,642
Aberdeen	11523	PHS Indian Health Center FORT TOTTEN, ND	2	2,421
Aberdeen	11524	PHS Indian Hospital FORT YATES, ND	33	45,235
Aberdeen	11525	PHS Indian Health Center NEW TOWN, ND	17	17,168
Aberdeen	11506	PHS Indian Hospital WINNEBAGO, NE	1	2,060
Aberdeen	13170	PHS Indian Hospital EAGLE BUTTE, SD	10	43,428
Aberdeen	16180	PHS Indian Health Center FORT THOMPSON, SD	11	15,043
Aberdeen	12669	PHS Indian Health Center KYLE, SD	20	27,152
Aberdeen	15386	PHS Indian Health Center MCLAUGHLIN, SD	4	9,808
Aberdeen	41235	PHS Indian Hospital PINE RIDGE, SD	36	68,604
Aberdeen	11545	PHS Institutional Support Fac PINE RIDGE, SD	55	77,437
Aberdeen	11547	PHS Institutional Support Fac ROSEBUD, SD	24	65,413
Aberdeen	41237	PHS Indian Hospital ROSEBUD, SD	51	101,777
Aberdeen	11548	PHS Indian Hospital SISSETON, SD	2	4,904
Aberdeen	11549	IHS Wagner Health Center WAGNER, SD	3	7,870
Aberdeen	13508	PHS Indian Health Center WANBLEE, SD	9	5,847
Alaska	61087	PHS Indian Hospital BARROW, AK	3	62,639
Alaska	61088	PHS Indian Hospital BETHEL, AK	26	131,921
Alaska	61093	Kanakanak IHS Hospital DILLINGHAM, AK	10	42,048
Alaska	41232	KIC Quarters Site KOTZEBUE, AK	4	55,973
Alaska	41233	NANA Quarters Site KOTZEBUE, AK	3	19,992
Alaska	61094	Kotzebue Older Qtrs KOTZEBUE, AK	5	28,042
Alaska	16182	Nome Quarters Bldg NOME, AK	1	841
Alaska	61092	Mt. Edgecumbe IHS Hospital SITKA, AK	4	8,150
Alaska	61097	PHS Indian Health Station TANANA, AK	5	20,476
Albuquerque	11512	PHS Indian Health Center DULCE, NM	5	8,041
Albuquerque	11514	PHS Indian Hospital MESCALERO, NM	8	14,358
Albuquerque	37562	NEW SUNRISE REG TREATMENT CTR SAN FIDEL, NM	1	1,240
Albuquerque	33115	PHS Indian Hospital SAN FIDEL, NM	18	49,050
Albuquerque	11520	PHS Indian Hospital ZUNI, NM	27	27,361
Bemidji	11499	PHS Institutional Support Fac WHITE EARTH, MN	4	3,391
Billings	11501	PHS Indian Hospital BROWNING, MT	47	84,149
Billings	11502	PHS Indian Hospital CROW AGENCY, MT	32	36,893
Billings	11503	PHS Indian Hospital-FT BELKNAP HARLEM, MT	10	15,554
Billings	11504	No. Cheyenne Health Ctr LAME DEER, MT	24	35,006
Billings	37556	Quarters Compound LODGE GRASS, MT	9	11,716
Billings	11505	PHS Institutional Support Fac POPLAR, MT	13	17,786
Billings	12679	PHS Institutional Support Fac ROCKY BOYS, MT	9	11,886
Billings	11556	PHS Institutional Support Fac FORT WASHAKIE, WY	7	7,774
Nashville	11500	PHS Institutional Support Fac PHILADELPHIA, MS	3	4,172
Nashville	11521	PHS Indian Hospital CHEROKEE, NC	6	8,221
Navajo	11468	PHS Indian Hospital CHINLE, AZ	96	255,788
Navajo	11469	PHS Indian Hospital FORT DEFIANCE, AZ	72	106,258
Navajo	35774	PHS Indian Health Center INSCRIPTION HOUSE, AZ	13	33,525
Navajo	11974	PHS Indian Health Center KAYENTA, AZ	48	58,448
Navajo	16171	PHS Indian Health Center MANY FARMS ROUGH ROCK, AZ	11	16,368
Navajo	11976	PHS Indian Health Station PINON, AZ	1	1,660
Navajo	19717	Shonto Housing SHONTO, AZ	3	3,326
Navajo	30550	PHS Indian Health Center TEEC NOS POS, AZ	3	4,464
Navajo	37554	PHS Indian Health Center TSAILE, AZ	11	28,503
Navajo	11483	PHS Indian Hospital TUBA CITY, AZ	84	339,023
Navajo	11485	PHS Institutional Support Fac WINDOW ROCK, AZ	26	37,579
Navajo	11511	PHS Indian Hospital CROWNPOINT PUEB PINT, NM	72	120,146
Navajo	11969	PHS Indian Medical Center GALLUP, NM	1	3,150
Navajo	35775	PHS Indian Health Center HUERFANO (NAGEEZI), NM	5	9,224
Navajo	11517	PHS Institutional Support Fac SHIPROCK, NM	40	86,480
Oklahoma City	11536	PHS Institutional Support Fac TALIHINA, OK	18	22,980
Phoenix	11470	PHS Institutional Support Fac KEAMS CANYON, AZ	43	57,196

Phoenix	11472	PHS Indian Hospital PARKER, AZ	16	22,692
Phoenix	11975	PHS Indian Health Center PEACH SPRINGS, AZ	7	8,438
Phoenix	11475	PHS Indian Hospital SACATON, AZ	8	11,404
Phoenix	11477	PHS Indian Hospital SAN CARLOS, AZ	26	40,885
Phoenix	37565	PHS Indian Health Station SUPAI CANYON, AZ	2	3,584
Phoenix	11484	PHS Indian Hospital WHITERIVER, AZ	77	108,979
Phoenix	11507	PHS Indian Hospital OWYHEE, NV	15	39,867
Phoenix	11480	PHS Indian Health Center SCHURZ, NV	2	3,563
Phoenix	11550	PHS Indian Health Center FORT DUCHESNE, UT	8	10,200
Portland	11542	PHS Indian Health Center WARM SPRINGS, OR	7	11,482
Portland	30067	PHS Indian Health Center NEAH BAY, WA	9	12,296
Tucson	11482	PHS Indian Hospital SELLS, AZ	25	55,826

IHS Annual Energy Implementation Report

I. Management and Administration.

A. Energy Management Infrastructure

1. Senior OPDIV Official

The senior Agency Official is the Director, Division of Facilities Operations. This person supervises the Agency's Energy Coordinator. The Agency Energy Team consists of 12 Area Offices (Aberdeen, Albuquerque, Alaska, Bemidji, Billings, California, Nashville, Navajo, Oklahoma, Portland, Phoenix, and Tucson) and two Regional Offices (Engineering Service (ES) in Dallas and Seattle). The 12 Area Offices and two Engineering Services Offices each have a designated Energy Coordinator who is supervised by the Area Facility Engineers or ES Directors.

2. Area Centralized Energy Program

Aberdeen:	Energy data will be collected and compiled by the Project Engineer in Martin, however, the data will be analyzed on a quarterly basis.
Alaska:	Alaska employs an Area energy coordinator to collect and report data to the Tribal Health Organizations (THO's) and IHS Headquarters. The coordinator seeks energy saving program and project opportunities and works directly with the THO Facility Managers to implement energy conservation measures and training. The annual energy consumption data will be continued to be collected and reported. Energy Conservation Measures (ECM's) will be continually evaluated and implemented to offset the increasing energy requirements. Some additional energy increases are to be anticipated in the future, since all buildings in Alaska do not yet meet the Indoor Air Quality and Air conditioning requirements for healthcare space.
Albuquerque:	The Health Facilities Program is presently under consolidation. Upon implementation, the Energy Coordinator will directly assist the Facility Engineers and Managers with their energy programs and will financially manage the utilities accounts for all service units.
Oklahoma City:	The Area Energy Coordinator may attend the FEMP Lights Online Training in FY2005.
Phoenix:	Most information is received at the Area and disseminated to the Service Units. The energy audits were funded and done by the Area. The audits were disseminated to the Service Units for implementation. Most projects identified in audit for small facilities were not feasible specially the small projects. Most of the big projects that are feasible are already completed. In addition, some of facilities are up for replacement and not appropriate to spend funds on. In area of training, the Area Coordinator will attend another Energy course. The Phoenix Indian Medical Center has completed major portion the Area energy projects. However, since it is schedule for replacement we will probably scale back the energy project expenditures. All energy awareness information has been distributed to the Service Units.
Portland:	In the Area Office, a facility engineer serves the role of energy coordinator. This individual is responsible for the annual energy reports and the bulk of energy related projects. Energy conservations projects are prioritized for construction by the Portland Area Facilities Board.
Tucson:	The Energy Management Officer works under the direction of the Area Facilities Engineer. Efforts are coordinated thru periodic meetings with the Facility Managers. The Area worked with the Sells Hospital to conduct an audit of the existing HVAC system and identified potential energy savings projects by

replacing aged equipment. The San Xavier Campus is in the process of replacing existing manual irrigation valves with automatic valves and timers.

B. Management Tools

1. Awards (Employee Incentive Programs)

- Aberdeen: The Area will implement an incentives program in FY 2005 for Service Units who promptly provide accurate energy data and promote energy management at the local level.
- Albuquerque: Employees and Service Units will continue to be recognized for their efforts in implementing the executive order and for overall performance. The Area Director's Awards Program will also continue to be used as a tool for recognizing HF employees.
- Oklahoma City: Nominations from the OKC Area will be considered for the recently opened Pawnee Health Center for a 2005 Federal Energy and Water Mgmt. Award (under either the Federal Award Category or the Special Award Category) because the facility might be a good candidate since the period of eligibility for the 2005 awards is for achievements accomplished in FY2004 (fixing warranty items, adding trending capability, correcting the zoning problems, etc. in this case) where the installation has been completed and savings have begun to accrue.
- Portland: On-the-spot awards have been provided to Service Unit employees who have implemented and demonstrated successful energy management policies and practice. Personnel are also nominated for national, agency, regional, or local recognition for outstanding contributions in conserving energy.

2. Performance Evaluations

- Aberdeen: The Area Facilities Engineer is responsible for energy management activities. Energy consumption monitoring will be assigned to field staff and be included in their performance evaluations.
- Albuquerque: Responsibility of the Energy Program at the Area level will continue to be included in the Energy Coordinator's performance evaluation. The area will review the requirements to determine changes in future evaluations.
- Oklahoma City: LEED certification will be pursued in FY05 for a major renovation and addition at the Lawton Indian Hospital. Compliance with ASHRAE standards, along with sustainability principles via technical assistance from experts at FEMP, will be pursued in FY05 at the W.W. Hastings Indian Hospital for projects involving air handlers, the chiller plant, the HVAC control system, and new building design for a Physical Therapy Building and possible future outpatient clinics such as Pediatrics.
- Portland: The performance evaluation of energy program manager includes an consideration of performance as energy program manager.
- Tucson: Energy conservation elements are included in the position descriptions for facility managers.

3. Training and Education

- Aberdeen: No formal training will be held in FY05. In-service training will be provided to Area Office and field staff on collecting, monitoring, and reporting energy data.
- Albuquerque: The area will continue to encourage participation in the local training courses and provide individual training as necessary.
- Oklahoma City: A mechanical engineer in the OKC Area plans to attend the Comprehensive 5-Day training Program for Energy Managers, sponsored by The Association of Energy Engineers (AEE), in 2004 as partial fulfillment of requirements to maintain his certified energy manager (CEM) credentials. The Area Energy Coordinator may attend a course listed in the FEMP FY2004 Training Catalog and Resource Guide

- and will encourage facility managers to consider attending one of these courses. One of the real-time distance learning seminars (such as Fundamentals of Lighting Efficiency or Introduction to Power Quality) offered by the AEE may be taken by the Area Energy Coordinator in FY2004.
- Phoenix: At the annual the Facilities Manager's workshop, training on Energy management will be scheduled. The Area coordinator will attend energy management training.
- Portland: Annual OEH&E Seminar will include presentation of Area wide energy and water conservation performance at sites. Discussion will include purchase of energy efficient products.
- Tucson: Training needs are re-assessed continually and training plans submitted annually. Specific courses included HVAC, appliance, and furnace servicing.

4. Showcase Facilities

- Aberdeen: The Area will have the new Sisseton Health Center under construction in FY 05. Follow up will be needed to determine whether it qualify as a showcase facility.
- Albuquerque: Showcase facilities will be identified and recommended for recognition if applicable.
- Oklahoma City: The new Pawnee Health Center might should be considered due to the use of geothermal energy and the energy recovery components of the exhaust fans.

II. Implementation Strategies

A. Life-Cycle Cost Analysis

- Aberdeen: The ESPC included energy savings projects at nine Area facilities. These projects have been analyzed and included in the ESPC to save energy with excellent pay back times. Beginning in FY 05, water consumption and conservation will be a focus for the Aberdeen Area.
- Alaska: Life cycle cost analysis is a required element for evaluation of all potential energy projects or ECM's. The 10-year simple payback is a go no-go decision tool and the Life cycle cost is used to prioritize the best use of funding. The MIRAC funding criteria require this method of project evaluation prior to releasing funds for an energy project.
- Albuquerque: Life cycle cost analysis will continue to be used on major projects.
- Oklahoma City: An existing HVAC & Electrical Systems Improvement Report for the W.W. Hastings Indian Hospital contained a life cycle cost analysis and compared alternatives for nine projects and this report will be referenced during design efforts in 2005. We plan to apply LEED compliant whole building design principles to our master planning for new construction in FY05. We plan to prioritize implementation of projects such as reactivating a solar hot water system, lighting upgrades and installing occupancy sensors, installing variable frequency drives on chilled water pumps/cooling tower motor/ hot water pumps, using the cooling tower as a wet side economizer, insulating steam and pressure regulating valves, raising the chilled water supply temperature set point, reactivating economizers on rooftop units, implementing night setback controls, and installing carbon dioxide detectors in outpatient waiting rooms. We plan to write specifications for A&E design services in order to comply with the building envelope/HVAC systems/service water heating/power/lighting aspects of ANSI/ASHRAE/IESNA Standard 90.1-2001 (Energy Standard for Buildings Except Low-Rise Residential Buildings) and to comply with ASHRAE Standard 62-2001 (Ventilation for Acceptable Indoor Air Quality).
- Portland: Life cycle cost analysis is done on large projects to assure 10-years paybacks are anticipated. For energy conservation projects (less than \$25,000), technologies with proven paybacks (Energy Star products) are used to assure energy efficiency.

Tucson: Life-cycle cost analysis included in building procurement documents. Energy efficiency and maintenance cost estimates are considered when procuring equipment. Currently, the Sells Hospital is in the process of replacing outdated mechanical equipment with high efficiency equipment. This decision was supported with a Facility Condition Assessment that was completed in 2003.

B. Facility Energy Audits

IHS plans to continue auditing at least ten percent of facility space on an annual basis.

C. Financing Mechanisms

Aberdeen: The Area ESPC with Johnson Controls Inc. is a 15-year contract beginning on October 1, 2001. The initial first year investment by Johnson Controls Inc. is nearly \$2,000,000 to upgrade HVAC equipment and control systems at six locations and lighting retrofits at nine locations. The energy savings at these locations is estimated at 23%. These energy savings are estimated to be about the same in FY 05.

Albuquerque: Perform SAVEnergy audits at Santa Fe and Mescalero hospitals.

Oklahoma City: We do not plan to use any ESPC's in FY05.
The U. S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Federal Energy Management Program, selected our "Sustainable Mechanical and Electrical Upgrades for an I.H.S. Hospital" project for help as a result of our online submission from their Call for FY 2005 Technical Assistance Projects. Technical assistance on our project will be provided by DOE National Laboratories or contractors. We will be contacted by our DOE Regional Office before November 30, 2004 to schedule a kick-off meeting, and discuss agency committed cost sharing and reporting requirements.

Tucson: The Tucson Area applied for joint funding from the DOE for a energy audit. The proposal was denied for 2003 but under consideration in 2004.

D. ENERGY STAR® and Other Energy-Efficient Products

Aberdeen: The Area will start construction of an Energy Star building in FY 05 -Sisseton Health Center.

Alaska: ANTHC engineers work with the THO's Facility managers to evaluate project specifications and purchases to insure the most energy efficient models are considered in the procurement process.

Albuquerque: The area will continue to encourage all staff to consider energy efficiency when procuring and specifying products for construction and renovation.

Oklahoma City: We will strive to further promote ENERGY STAR® and Other Energy-Efficient Products in 2005.
We will encourage that EZSave Monitor Manager, available from the Energy Star website, be activated on networks in health facilities or individually so that computer monitor settings will be adjusted to the most energy efficient level.

Phoenix: With all new projects, procurement of Energy Star and other energy efficient products are incorporated into specifications.

Portland: The Portland Area Indian Health Service Guidelines establishes model operations and maintenance purchasing procedures for increased energy efficiency with the service units.

Tucson: Energy Star products are reviewed for all maintenance and project activities.

E. ENERGY STAR® Buildings

- Aberdeen: The Sisseton Health Center, when completed in FY 06 should qualify.
- Albuquerque: The area will continue to utilize the Portfolio Manager to determine if any facilities are eligible for designation as an energy star building.
- Oklahoma City: We can advocate for buildings to meet the ENERGY STAR® Building criteria and become officially designated ENERGY STAR® Buildings in 2005.
- Portland: The Neah Bay Service Unit is eligible to be officially designated as an Energy Star Building. This constitutes 11% of the Portland Area facilities.

F. Sustainable Building Design

- Aberdeen: Sustainable building design principles will be considered for projects beginning in FY 05.
- Albuquerque: Staff will be encouraged to utilize all applicable guidelines and principles regarding energy efficiency into the sighting, design, and construction of new facilities.
- Oklahoma City: We will continue to advocate in FY05 for compliance with ASHRAE/IESNA Standard 90.1-1999 (Energy Standard for Buildings Except Low-Rise Residential Buildings) and its Addendum J which took effect Oct. 29, 2001 along with other sustainability principles from sources such as the whole building design guide and the Office of the Federal Environmental Executive.
- Portland: New facility construction and remodeling will use new practices and products for energy efficiency and water conservation.
- Tucson: Sustainable design principles are applied to a projects to include renovations and new construction.

G. Energy Efficiency in Lease Provisions

- Albuquerque: Energy and water efficiency will continue to be considered when renegotiating or extending leases.
- Oklahoma City: We plan to further discuss, with our Area Realty Officer and the Lease Contracting Officer, how energy and water efficiency can be considered when the OKC Area enters into new leases or renegotiate/extend existing leases in FY05.

H. Facility Efficiency Improvements

- Aberdeen: The Area may pursue additional service contracts in FY 05 with the ESPC contractor.
- Albuquerque: The service units will be encouraged to explore projects for energy efficiency versus routine repairs/preventive maintenance and to coordinate those opportunities with the area.
- Oklahoma City: A steam boiler is being replaced at the W.W. Hastings Indian Hospital in Tahlequah in November of FY05 and this new boiler will exceed the combustion efficiency requirement of ASHRAE Standard 90.1-2001.
- Phoenix: Most of these activities have been previously implemented in prior years. Practically all the major energy saving projects has been completed in prior years. Many funds have been expended on identified feasible energy saving projects especially at PIMC.
- Portland: Periodic energy audits is the primary implementation strategy used to determine energy saving opportunities.
- Tucson: In FY 2003, work began on an energy audit that will incorporate LEED for Existing Building criteria. It is anticipated that projects will be identified in 2004 and incorporated into new and existing projects.

I. Highly Efficient Systems

- Albuquerque: The Pueblo of Taos is performing a study on the applicability of a wood-fired bio-energy combined heat and power system. If feasible, service would be made available to the Taos hospital. The hospital and area will consider the benefits of participating in the system.
- Phoenix: FY05 energy saving projects schedule for implementation in the 2005 plan as following: Phoenix Indian Medical Center: 1. Replace damaged and leaking air handler gaskets \$65,000. 2. Add flat plate HEX and automated chilled water system \$50,000. 3. Add capacitor bank for power factor correction \$20,000.

J. Off-Grid Generation

- Alaska: YKHC is pursuing a feasibility study for a wind turbine application at the Bethel Hospital and other Yukon Delta community clinics. ANTHC Area Energy Coordinator is assisting in the technical and economic analysis and planning for anticipated project(s). Data analysis has not yet been completed.
- Albuquerque: Will continue to take advantage of alternative systems where applicable.
- Oklahoma City: An off-grid alternative is offered by a large electricity provider, Oklahoma Gas & Electric, via 34 wind turbines that generate power that is fed into the OG&E power grid but it is highly unlikely that we will be able to afford the price premium. The wind power option costs \$.02 per kWh in addition to OG&E's standard charge for electricity and is sold in 100 kWh units. It is highly unlikely, due to the economics and viability, that installing our own small wind turbines will be pursued.

K. Purchased renewable energy

- Alaska: Will continue to purchase waste heat from local utility companies.
- Albuquerque: Another electric rate reduction will become effective in September 2005. Prior to this reduction, the area will review the possibility of increasing participation in the PNM wind energy program, either by adding installations to the program or increasing purchasing percentage.

L. Electrical Load Reduction Measures

- Aberdeen: The Area will check with power suppliers in FY 05 for load reduction opportunities.
- Albuquerque: The area will assist the service units during emergencies. Service unit plans will be reviewed to ensure appropriateness and update as needed.
- Oklahoma City: We will try to review our existing plans from the 2001 ALERT (Assessment of Load and Energy Reduction Technique) directive for the teams that are in place at 3 of our hospitals and investigate opportunities for possible additional measures prior to the FY05 cooling season.
- Phoenix: The area office will alert all service units within the area when energy reduction is needed. The service units will load the emergency generators, adjust thermostats, shut down all unnecessary and nonessential equipments, turn off lights, etc.
- Portland: Upon notification of a power emergency. The Portland Area Office will alert all Federal IHS Facilities within the Portland Area. The facilities will adjust building temperatures, turn off lights, and shutting down other nonessential equipment.
- Tucson: Critical circuits have been identified as part of an electrical audit conducted in 2004. A project is under development to prioritize the circuits in order to provide available electrical load to the higher priority circuits such as operating and emergency rooms..

M. Water Conservation

- Aberdeen: The Area will develop a mechanism to measure water consumption in FY 05. This initiative may result in a water metering program the first year.
- Alaska: Energy audits recently conducted at six of the seven hospitals identified energy conservation measures (ECM's) to include addressing water conservation. ECM's are then bundled together with other projects and accomplished.
- Albuquerque: The area plans to assess the possibility of retrofitting all sinks, showers, and toilets to meet a new city ordinance on water reduction for the Santa Fe hospital. Additional projects and improvements will be reviewed at the remaining facilities.
- Oklahoma City: We will attempt to implement some of the FEMP Best Management Practices at our facilities in FY05 and we will attempt to model our water efficiency plan so that it is similar to the plan from the National Renewable Energy Laboratory dated January, 2003. We plan to also use applicable portions of the Air Force Water Conservation Guidebook which is referenced in the NREL water efficiency plan. Xeriscaping, a systematic concept for saving water in landscaped areas, will be encouraged if landscaping projects are done.
- Portland: The Portland Area Office provides service units with technical support to improve water efficiency. All new construction and remodeling projects which involve the consumption of water will use water conservation devices.
- Tucson: A landscape plan is in the conceptual development phase. The project will reduce water consumption by replacing grass areas with desert vegetation and natural landscape at each of the campuses.

N. Maintenance Technologies

- Albuquerque: Additional projects where the benefits of the IR camera can be used will be pursued.
- Oklahoma City: We plan to encourage facility managers in 2005 to use the results of the Infrared Thermographic analysis and Vibration analysis that were recently done at 8 facilities.
We plan to make progress toward upgrading air handlers at one hospital to meet the intent of ASHRAE Standard 62-2001 which requires minimum maintenance items, activities, and frequencies per figure 5 of table 8-1 in the O&M section of this standard.